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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,432	07/17/2003	Gary A. Strobel	34373/0007	4064

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EXAMINER
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MARX, IRENE

ART UNIT	PAPER NUMBER
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1651

DATE MAILED: 08/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/623,432	Applicant(s) STROBEL ET AL.	
	Examiner Irene Marx	Art Unit 1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 7/10/06.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 72-82 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 72-82 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413) .<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)               |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

The amendment filed 7/10/06 is acknowledged. Claims 72-82 are being considered on the merits.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 80-82 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

No clear basis or support is found in the present specification for the various combinations of volatiles as now claimed. Applicant did not indicate the source for the amendments in the specification with any specificity.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 72-82 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 72-82 are vague and indefinite in the recitation of "exposing the organism or a habitat of the organism to "an effective amount of a composition comprising an effective amount..." since a maximum but not a minimum is defined for some of the volatile compounds as in claim 72, for example, and the microbe intended is not defined with any particularity. In addition, "exposing" does not set forth whether contact with the target is or is not achieved.

Claims 72 and 76 are confusing in the recitation of "soil surrounding the plants", since it is unclear whether what is intended. Which plants?

### Response to Arguments

Applicant's arguments have been fully considered but they are not deemed to be persuasive. In response to Applicant's argument that "exposing" is appropriate because a sealed environment or microcup are shown in the specification, applicant misinterprets the principle that claims are interpreted in the light of the specification. Although these elements (sealed environment or microcup) are found as examples or embodiments in the specification, they were not claimed explicitly. Nor were the words that are used in the claims defined in the specification to require these limitations. A reading of the specification provides no evidence to indicate that these limitations must be imported into the claims to give meaning to disputed terms.

The claims are directed to exposing the habitat. Therefore, these arguments fail to persuade.

With respect to "effective amount" applicant has not defined the purpose of the effective amount with any particularity. It is unclear how an amount effective to inhibit the growth of any microbe can be determined if all that is done is "exposing" the habitat of microbe with the volatile of interest in trace amounts that may be effective for some purpose. That applicant has specific delivery systems and tests for efficacy is noted. However, the tests are not within the context of the invention as claimed which covers application to fruit, seeds, plants, soil surrounding the plants, farm implements and buildings. There is no claim designated limitation to indicate "exposure" in a sealed or even a closed environment.

Therefore the rejection is deemed proper and it is adhered to.

Claims 72-82 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the inhibition of certain fungi with a mixture of volatile compounds does not reasonably provide enablement for the inhibition of any microbe using certain volatiles singly or in combination in any amount..

The inhibition of microbes with volatile compounds is unpredictable particularly when using trace amounts. The specification as-filed does not provide sufficient guidelines or teachings for the inhibition of any and all microbes. It is noted that some of the volatiles listed are toxic. The teachings provided in the as-filed specification would not have enabled one skilled in the art to "use" the *Muscodor*-derived volatile compounds to inhibit any microbe, in

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the claim designated methods. The guidance provided in the specification is not adequate to lead persons of skill in the art toward success in inhibiting all the organisms recited in the process encompassed by the claims in a predictable manner, because the effects of single compounds are not set forth with any particularity and the amounts required for effectiveness are not specified with sufficient particularity. It is apparent that applicant is offering an "invitation to experiment" to those skilled in the art to perform various techniques and to determine for themselves whether they have inhibited the growth of a microbe, insect or nematode. See *Genentech, Inc. v Novo Nordisk A/S.*, 42 USPQ2d 1001, 1005 (Fed. Cir. 1997) ("Tossing out the mere germ of an idea does not constitute an enabling disclosure"). Also, *In re Scarbrough*, 182 USPQ 298, 302 (CCPA 1974) ("It is not enough that a person skilled in the art, by carrying out investigations along the line indicated in the instant application, and by a great amount of work eventually might find out how to make and use the instant invention. The statute requires the application itself to inform, not to direct others to find out for themselves. *In re Gardner et al.*, 166 USPQ 138 (1970)").

Undue experimentation would be required to practice the invention as claimed due to the quantity of experimentation necessary to identify the volatile compound(s) necessary to inhibit the growth of any and all microbes, any and all insects at any stage and any and all nematodes; limited amount of guidance and limited number of working examples in the specification directed to the treatment of a large variety of members of the organisms recited with combinations of compounds; the unpredictable nature of an invention directed to the use of single or specific combinations of volatile compounds in any amount to inhibit the growth of any and all microbes, any and all insects at any stage and any and all nematodes; the unpredictability in the art and breadth of the claims directed to the use of certain volatiles singly or in certain combinations to inhibit the growth of any and all microbes, any and all insects at any stage and any and all nematodes. *In re Wands*, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

#### **Response to Arguments**

Applicant's arguments and declaration have been fully considered but they are not deemed to be persuasive.

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Applicant's allegation that the claims do not recite any and every microbe is not understood. The term "microbe" in claim 72 encompasses any and all microbes in the recited environments.

Applicant presents data to show experiments against specific fungi in specific petri dish environments conducted, all of which appear to be post-harvest pathogens in plants using fumigation boxes wherein the microbes are treated with the volatile for extended period of time.. However the claims are directed to the inhibition of growth of any microbe in particular environments that include undefined habitats such as soil and buildings.

The data presented in the declaration are directed to the inhibition of growth of the few fungi and one bacterium, specifically *Penicillium expansum*, *Rhizoctonia solani*, *Aspergillus niger*, *Geotrichum citri-aurantii*, *Erwinia carotorova* and *Cladosporium cladosporioides*. While results are impressive, these findings cannot be properly extrapolated to any and all microbes in any of the recited environments. It is well known that at least some of the touted volatiles are produced by microbes, the growth of which is clearly not inhibited thereby, particularly in amounts that encompass the absence of volatiles. For example, Nout adequately demonstrate that a mixture of volatiles comprising 3-methyl-1-butanol and/or 2-methyl-1-butanol are ineffective to inhibit the growth of microbes such as *P. Kluyveri*, *C. shehatae*, *C. zeylanoides*, *C. guiliermondi* and *D. hanseii*. See, e.g., Tables 1-3. In addition, Robinson *et al.* adequately demonstrate that exposure to a mixture of volatiles comprising isobutanol does not affect the growth of a fungus such as *Fusarium oxysporum*. See, e.g., Table 1.

Thus, the scope of the claims is not commensurate with the teachings of enablement of the specification.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 72, 73, 76, 77, 78 and 80 rejected under 35 U.S.C. 102(b) as being clearly anticipated by Robinson *et al.*.

The claims are directed to a process of inhibiting any microbe with a composition comprising isobutyl alcohol in soil, for example.

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Robinson *et al.* disclose a process of inhibiting fungi by exposing to compositions comprising isobutanol in soil. See, e.g., Table 1. Applicant is reminded that the recitation “less than” encompasses the absence of the respective material.

### **Response to Arguments**

Applicant's arguments have been fully considered but they are not deemed to be persuasive.

Contrary to applicant's contentions it is noted that the claims as written require less than a certain amount of volatiles, which reads on the absence thereof, and undisclosed active ingredients, including isobutyl alcohol, for example. Therefore, it is submitted that the claims are properly anticipated by the reference.

No claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irene Marx whose telephone number is (571) 272-0919. The examiner can normally be reached on M-F (6:30-3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 .

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in cursive script, appearing to read "Irene Marx".

Irene Marx  
Primary Examiner  
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